

1. Explain the connection when there is no government or foreign trade between the GDP expenditure identity  $Y = C + I$  and the equation  $\dot{k}(t) = f(k(t)) - c(t) - (n + g)k(t)$ .
2. Adding government spending to the GDP identity gives  $Y = C + I + G$ . How does this relate to the augmented  $\dot{k}$  equation  $\dot{k}(t) = f(k(t)) - c(t) - G(t) - (n + g)k(t)$ , where  $G(t)$  is government spending per effective labor unit?
3. Given that households maximize lifetime utility subject to a lifetime budget constraint, why (intuitively) would a temporary change in government spending have a different effect on consumption than a permanent one?